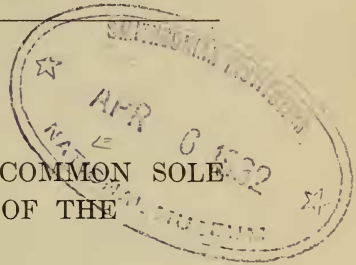


PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON



THE SCIENTIFIC NAME OF THE COMMON SOLE
OF THE ATLANTIC COAST OF THE
UNITED STATES.

BY CARL L. HUBBS.

The most common and best known of the soleid fishes of the United States has passed almost consistently as *Achirus fasciatus* (Lacépède), since this name was adopted by Jordan and Goss (1889 : 315), and by Jordan and Evermann (1898 : 2700). Recently, however, doubt has been cast on the applicability of either the generic or specific name to this species. It is the purpose of the present note to consider the recent claims, and to review the problem from the standpoint of the early writers as well.

The generic name will be considered first. The genus *Achirus* was established by Lacépède in his *Histoire Naturelle de Poissons* (1802 : 658). Lacépède divided his genus into two subgenera; neither of which he named. The second subgenus was made to include two sinistral species, now not classed in the Soleidae, as that family is at present delimited. As neither of these species of the second subgenus has ever been considered as the type of *Achirus*, attention may be restricted to the species of the first subgenus, namely *Achirus barbatus*, *A. marmoratus*, *A. pavoninus* and *A. fasciatus*.

The first subdivider of the genus was Kaup (1858), who restricted the genus to the first three species named, and placed *fasciatus* (and the related *lineatus*) in a new genus *Grammichthys*. This action was known to Jordan and Goss (1889 : 308), Jordan and Evermann (1898 : 2693) and others, but has been interpreted as determining the status of the generic name only by Chabanaud (1930 : 263). Emphasizing this point, and the fact that *barbatus*, the first species listed by Lacépède, is considered a doubtful synonym of *marmoratus*, which species with *pavoninus* constituted the genus *Pardachirus* Günther (1862 : 478), Chabanaud (1930 : 262) replaced *Pardachirus* with *Achirus*. In so doing he removed *Achirus* from the group

generally called Achirinae (for which he substituted Trinectinae); and applied it to Indopacific rather than New World species.

Fortunately this action appears unnecessary, and invalid, because Article 30 I (d) of the International Code states: "If a genus, without originally designated (see *a*) or indicated (see *b*) type, contains among its original species one possessing the generic name as its specific or subspecific name, either as valid name or synonym, that species or subspecies becomes *ipso facto* type of the genus. (Type by absolute tautonymy.)" The genus did contain the specific name *achirus*, for Lacépède (1802 : 662) listed "*Pleuronectes achirus* Linné, *Syst. naturae* X, I, p. 268, n. 1, 3," as a synonym of his *Achirus fasciatus*. The fact that the name *achirus* was (presumably) wrongly synonymized with *fasciatus*, or that Lacépède presumably had never seen the true *achirus* appears irrelevant, despite the opposite view of Chabanaud, as the Rule quoted makes no provision for such an exigency.

Therefore, the Code requires that *Pleuronectes achirus* Linné be the type of the genus, as claimed by Jordan (1917 : 65, and 1923 : 5) and Myers (1929 : 37). The fact that *Pleuronectes achirus* was named in the first definite type designation for *Achirus* (Jordan and Gilbert, 1883 : 841) is probably not to be considered as significant, nor apparently, is Jordan and Goss' designation of *Achirus fasciatus* as the type (1889 : 308) to be considered, however much we might wish this could be done. In this connection, however, it should be noted that both Lacépède and Jordan and Gilbert placed *achirus* in the synonymy of *fasciatus*.

If the identification of *Pleuronectes achirus* Linné with *Solea gronovii* Günther (1862 : 472) be accepted, as made by Jordan and Goss (1889 : 311), Jordan and Evermann (1898 : 2695), Jordan (1923:7), Myers (1929:36), and by Chabanaud in 1930 though not in 1928, then it becomes necessary to synonymize *Baiostoma* with *Achirus* and to employ *Trinectes* for *fasciatus* and its allies. This is the course adopted by Myers, and appears unescapable, if Chabanaud's separation of the genera (1928) is accepted, as I think it should be. The view that *Trinectes scabra* Rafinesque is a recognizable synonym of *Achirus fasciatus*, and that the generic name *Trinectes* is therefore available for the species, seems acceptable. Chabanaud (1930) reprinted Rafinesque's account, which is merely "A new genus of fish near to *Achirus*, found in the River Schuylkill; it has only three fins, dorsal, and anal and caudal." Considering the locality, which is permissible according to Opinion 52 of the International Commission on Zoological Nomenclature, this account certainly applies to *Achirus fasciatus* and only to that species.

If *Pleuronectes achirus* be regarded as not identifiable with *Solea gronovii*, then both the specific and generic name, as pointed out by Myers (1929) are apparently unusable, because they are not identifiable with even as much possibility with any other species and genus. In order to avoid dropping the time-honored name of *Achirus*, the customary identification of *P. achirus* ought to be maintained if possible.

New testimony as to the *specific* name of our common sole is introduced by Chabanaud (1930:262), who has examined the type of *Pleuronecte maculatus* Bloch and Schneider (1801 : 157) and pronounces it identical with

Achirus fasciatus Lacépède (1802 : 662). He therefore regards the assigned type locality of *maculatus* ("Habitat ad Tranquebariam") as an error. No such species can now be identified in the Indian fauna (Norman, 1928 : 186). The original description is as to be expected very weak and incomplete, but applies fairly well to *fasciatus*. The distinct and rounded caudal fin, the absence of pectoral fins, coupled with the moderately low number of dorsal and anal rays (admitting that the author counted the rays somewhat too few according to later accounts), the entirely cirrate lower lip, the presence of teeth on the inferior surface of the maxilla, the straight lateral line and the black-blotched coloration, is a fairly distinctive characterization of the species.

The redescriptions of the type of *Pleuronectes maculatus* by Day (1877 : 427) and Chabanaud seem to confirm the view that it is referable to the species called *Achirus fasciatus* one year later. The determination that the blind surface was black-spotted apparently cinches the identification.

Out of harmony with the identification of *maculatus* with *fasciatus* is the number of pelvic rays, which are given by Bloch and Schneider as 5 and by Day as 6 in the type of *maculatus*, whereas *fasciatus* has 3 to 5, usually 4, pelvic rays, according to Chabanaud (1928 : 9). But must be borne in mind that the type was a skin covered with varnish, according to Day, and that the rays could not be exactly enumerated according to Chabanaud. It might be very difficult to distinguish between pelvic and anal rays, in such a specimen, where the fins are conjoined.

The scientific name of our sole should on these premises stand as *Trinectes maculatus* (Bloch and Schneider). Chabanaud's identification, in 1930, of our species with *lineatus*, appears inadmissible, in view of the evidence presented by Jordan and Goss in 1889 (p. 312), and since accepted by almost all authors.

LITERATURE CITED.

BLOCH, M. E., AND SCHNEIDER, JO. GOTTLÖB.

1801. *Systema ichthyologiae iconibus CX illustratum*, Berlin: I-LX, 1-584.

CHABANAUD, PAUL.

1928. Revision des Poissons Hétérosomes de la sous-famille des *Achirinae*, d'après les types de Kaup, de Günther et de Steindachner. *Bull. Inst. Océanogr.*, 523 : 1-53.

1930. Sur la taxonomie des Soléidés du Nouveau-Monde. *Bull. Mus. Hist. Nat. Paris*, (2) 2 (3) : 260-268.

DAY, FRANCIS.

1877. *The fishes of India* . . . , London : I-XX, 1-778.

GÜNTHER, ALBERT.

1862. Catalogue of the Acanthopterygii Pharyngognathi and Anacanthini in the British Museum. *Cat. Fishes Brit. Mus.*, 4 : i-xxi, 1-534.

JORDAN, DAVID STARR.

1917. The genera of fishes [pt. 1] from Linnaeus to Cuvier, 1758-1833 . . . Stanford University : 1-161.

1923. On the family of Achiridae or broad-soles, with description of a new species *Achirus barnharti* from California. *Univ. Calif. Publ. Zool.*, 26 (1) : 1-14, pl. 1.

JORDAN, DAVID STARR, AND EVERMANN, BARTON WARREN.

1898. The fishes of North and Middle America . . . pt. 3. *Bull. U. S. Nat. Mus.*, 47 (3) : I-XXIV, 2183-3136.

JORDAN, DAVID S., AND GILBERT, CHARLES H.

"1882"=[1883]. Synopsis of the fishes of North America. *Bull. U. S. Nat. Mus.* 16: I-LVI, 1-1018.

JORDAN, DAVID STARR, AND GOSS, DAVID KOP.

1889. A review of the flounders and soles (Pleuronectidae) of America and Europe. *Ann. Rep. U. S. Comm. Fish and Fish.*, 1886 : 225-342.

KAUP, J.

1858. Uebersicht der Plagusinae, der fünften subfamilie der Pleuronectidae. *Arch. Naturg.*, 24 (1) : 105-110.

LA CEPÈDE [=LACÉPÈDE, B. G. E.].

1802 ["Xde la République"]. *Histoire naturelle des Poissons*, Paris, 4: i-xliv, 1-728, 16 pl.

MYERS, GEORGE S.

1929. Notes on soles related to *Achirus*. *Copeia*, 171: 36-38.

NORMAN, J. R.

1928. The flatfishes (Heterosomata) of India, with a list of the specimens in the Indian Museum. Part II. *Rec. Ind. Mus.*, 30 (2) : 173-215, fig. 1-30, pl. 4-7.